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United States Department of Agriculture

Natural Resources Conservation

Montana Basin Outlook Report

January 1, 1995

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How forecasts are made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Soil Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

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Bozeman, Montana

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MONTANA Water Supply Outlook Report as of January 1, 1995

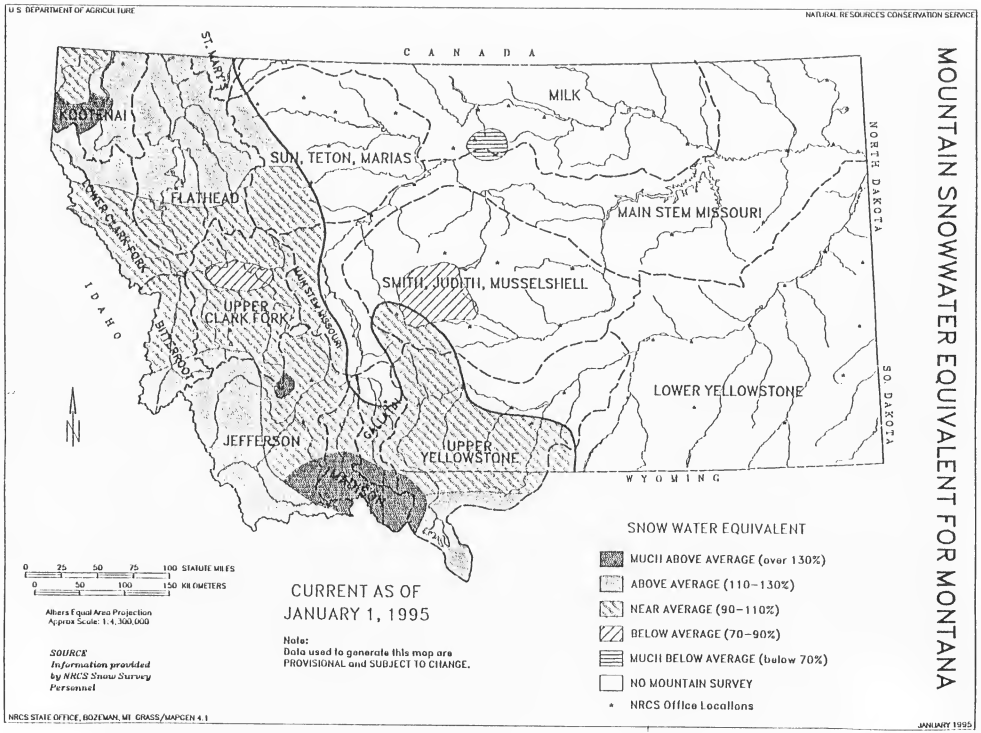
Early winter storms got the mountain snowpack off to a great start. Many regions had snow water contents twice to three times of average. During the latter part of December weather patterns changed and began keeping storms tracking down the Rocky Mountain Divide were little snow has been accumulating east of the Divide.

SNOWPACK

As of January 1, snow water content was generally slightly above average and nearly two thirds greater than last year at this time. River basin extremes have the Upper Madison River in southwest Montana 75 percent above average while the Bearpaw Mountains in north central Montana were 80 percent below average.

West of the Continental Divide, snowpacks were 14 percent above average and 64 percent above last year. East of the Continental Divide, snowpacks were 16 percent above average and 63 percent above last year.

RIVER BASIN	% OF AVERAGE	% OF LAST YEAR
COLUMBIA	114	164
KOOTENAI	132	181
FLATHEAD	117	161
UPPER CLARK FORK	104	146
BITTERROOT	103	169
LOWER CLARK FORK	110	179
MISSOURI	122	167
MISSOURI HEADWATERS	132	202
JEFFERSON	125	204
MADISON	142	225
GALLATIN	119	161
MISSOURI MAINSTEM	105	121
HEADWATERS MAINSTEM	121	146
SMITH-JUDITH-MUSSELSHELL	92	108
SUN-TETON-MARIAS	123	148
MAINSTEM ABOVE FT. PECK RES	111	133
MILK	26	20
ST. MARY	110	150
YELLOWSTONE	111	156
UPPER YELLOWSTONE	109	160
LOWER YELLOWSTONE (WYOMING)	111	156
WIND	106	167
SHOSHONE	116	189
BIGHORN	113	159
TONGUE	99	123
POWDER	131	153


U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
MOUNTAIN SNOWWATER EQUIVALENT FOR MONTANA
C A N A D A
ST. MARY
MILK
KOOTENAI
SUN, TETON, MARIAS
FLATHEAD
MAIN STEM MISSOURI
NORTH DAKOTA
LOWER CLARK FORK
SMITH, JUDITH, MUSSELSHELL
IDAHO
UPPER CLARK FORK
MAIN STEM MISSOURI
BITTERROOT
LOWER YELLOWSTONE
SO. DAKOTA
JEFFERSON
GALLATIN
UPPER YELLOWSTONE
MADISON
WYOMING
N
0 25 50 75 100 STATUTE MILES
0 50 100 150 KILOMETERS
Albers Equal Area Projection
Approx Scale: 1:4,300,000
SOURCE
Information provided by NRCS Snow Survey Personnel
CURRENT AS OF JANUARY 1, 1995
Note:
Data used to generate this map are PROVISIONAL and SUBJECT TO CHANGE.
SNOW WATER EQUIVALENT
MUCH ABOVE AVERAGE (over 130%)
ABOVE AVERAGE (110-130%)
NEAR AVERAGE (90-110%)
BELOW AVERAGE (70-90%)
MUCH BELOW AVERAGE (below 70%)
NO MOUNTAIN SURVEY
NRCS Office Locations
NRCS STATE OFFICE, BOZEMAN, MT GRASS/MAPGEN 4.1
JANUARY 1995

BASIN SUMMARY OF SNOW COURSE DATA

JANUARY 1995

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
MONTANA						
BADGER PASS PILLOW	6900	1/01/95	---	20.7	9.9	14.2
BANFIELD MTN PILLOW	5600	1/01/95	---	11.9	6.0	9.0
BARKER LAKES PILLOW	8250	1/01/95	---	8.5	5.7	6.8
BASIN CREEK PILLOW	7180	1/01/95	---	6.4	3.5	2.7
BASSOO PEAK	5150	12/29/94	19	4.4	--	--
BEAGLE SPGS PILLOW	8850	1/01/95	---	4.0	2.8	3.7
BEAVER CREEK PILLOW	7850	1/01/95	---	8.7	4.7	7.9
BISSON CREEK PILLOW	4920	1/01/95	---	4.9	3.7	3.9
BISSON CREEK	4920	12/28/94	21	5.0	3.4	4.1
BLACK BEAR PILLOW	7950	1/01/95	---	26.8	10.6	15.6
BLACK PINE PILLOW	7100	1/01/95	---	4.7	3.9	4.9
BLACKTAIL	5650	12/30/94	26	6.3	--	5.8
BLOODY DICK PILLOW	7550	1/01/95	---	6.5	2.5	5.1
BOULDER MTN PILLOW	7950	1/01/95	---	11.8	7.8	8.4
BOX CANYON PILLOW	6700	1/01/95	---	3.6	3.4	4.8
BOXELDER CREEK	5100	12/26/94	11	2.1	5.2	4.3
BRIDGER BOWL PILLOW	7250	12/29/94	---	11.5	8.6	10.5
BRIDGER BOWL	7250	12/29/94	42	13.6	9.8	10.6
CALVERT CR PILLOW	6430	1/01/95	---	3.1	2.0	4.1
CARROT BASIN PILLOW	9000	1/01/95	---	16.4	8.5	11.9
CHESSMAN RESERVOIR	6200	12/27/94	6	1.4	1.4	1.5
CLOVER MDW PILLOW	8800	1/01/95	---	10.0	6.6	7.9
COLE CREEK PILLOW	7850	1/01/95	---	8.4	9.9	7.7
COMBINATION PILLOW	5600	1/01/95	---	1.2	1.5	2.3
COPPER BOTTOM PILLOW	5200	1/01/95	---	4.2	3.9	4.7
COPPER CAMP PILLOW	6950	1/01/95	---	13.4	6.2	13.6
COYOTE HILL	4200	12/29/94	19	3.6	4.3	4.1
CRYSTAL LAKE PILLOW	6050	1/01/95	---	5.7	7.7	5.3
DAISY PEAK	7600	12/30/94	22	3.3	2.3	5.1
DALY CREEK PILLOW	5780	1/01/95	---	3.2	3.7	5.3
DARKHORSE LK. PILLOW	8700	1/01/95	---	16.4	6.5	15.5
DEADMAN CR PILLOW	6450	1/01/95	---	3.4	4.4	4.4
DESERT MOUNTAIN	5600	12/30/94	26	6.2	6.4	6.7
DISCOVERY BASIN	7050	12/29/94	27	5.0	3.8	4.4
DIVIDE PILLOW	7800	1/01/95	---	6.5	3.1	4.8
DIX HILL	6400	12/26/94	18	4.5	3.0	5.0
DUPUYER CREEK PILLOW	5750	1/01/95	---	5.6	5.3	4.8
EMERY CREEK PILLOW	4350	1/01/95	---	7.2	5.6	7.2
FISHER CREEK PILLOW	9100	1/01/95	---	17.5	9.0	15.6
FLATTOP MTN PILLOW	6300	1/01/95	---	23.8	14.8	21.0
FROHNER MDWS PILLOW	6480	1/01/95	---	3.1	2.5	3.4
GARVER CREEK PILLOW	4250	12/29/94	---	5.4	5.9	5.1
GARVER CREEK	4250	12/29/94	25	5.5	5.2	4.9
GRAVE CRK PILLOW	4300	1/01/95	---	9.0	7.1	7.7
GRIFFIN CR DIVIDE	5150	12/28/94	22	5.6	--	--
HAND CREEK PILLOW	5030	1/01/95	---	7.0	3.8	5.5
HAWKINS LAKE PILLOW	6450	1/01/95	---	13.4	7.1	13.0
HEBGEN DAM	6550	12/29/94	27	6.4	2.7	4.9
HELL ROARING DIVIDE	5770	1/03/95	53	16.4	7.7	13.0
HOLBROOK	4530	12/30/94	20	4.8	2.4	4.0

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
HOODOO BASIN PILLOW	6050	1/01/95	---	21.4	11.0	19.0
HOODOO BASIN	6050	1/01/95	---	24.7E	12.3	20.4
HOODOO CREEK	5900	1/01/95	---	21.0E	10.8	18.0
JOHNSON PARK	6450	12/31/94	15	1.8	1.6	3.3
KIWANIS CAMP	3720	12/26/94	0	.0	1.2	1.1
KRAFT CREEK PILLOW	4750	1/01/95	---	6.1	5.1	6.6
LAKEVIEW RDG. PILLOW	7400	1/01/95	---	6.2	1.5	5.4
LEMHI RIDGE PILLOW	8100	1/01/95	---	6.7	2.6	4.4
LICK CREEK PILLOW	6860	1/01/95	---	5.9	4.4	5.6
LONE MOUNTAIN	8880	12/30/94	40	11.8	6.7	10.1
LOWER TWIN PILLOW	7900	1/01/95	---	9.2	3.6	9.5
LUBRECHT PILLOW	4680	1/01/95	---	2.1	1.9	2.4
LUBRECHT FOREST NO 3	5450	1/02/95	12	2.4	2.0	2.6
LUBRECHT FOREST NO 4	4650	1/02/95	5	1.0	1.4	1.4
LUBRECHT FOREST NO 6	4040	1/03/95	5	.9	1.3	1.6
LUBRECHT HYDROPLOT	4200	1/03/95	11	2.0	2.0	2.8
MADISON PLT PILLOW	7750	1/01/95	---	17.0	6.5	10.1
MANY GLACIER PILLOW	4900	1/01/95	---	7.2	5.8	7.3
MARIAS PASS	5250	12/29/94	28	8.7	6.6	6.7
MAYNARD CR PILLOW	6210	12/29/94	---	4.5	4.2	4.6
MAYNARD CREEK	6210	12/29/94	21	5.8	5.0	5.8
MONUMENT PK PILLOW	8850	1/01/95	---	9.0	6.8	9.5
MOSS PEAK PILLOW	6780	1/01/95	---	25.4	12.2	16.1
MT LOCKHART PILLOW	6400	1/01/95	---	10.7	6.9	8.8
MULE CREEK PILLOW	8300	1/01/95	---	8.1	4.3	6.8
NEVADA CREEK PILLOW	6480	1/01/95	---	5.4	4.1	5.7
NEZ PERCE CMP PILLOW	5650	1/01/95	---	6.3	3.7	5.7
NOISY BASIN PILLOW	6040	1/01/95	---	22.2	13.9	17.2
N.F. ELK CR PILLOW	6250	1/01/95	---	4.8	3.7	4.6
NF JOCKO PILLOW	6330	1/01/95	---	17.7	11.1	17.9
NORTH FORK JOCKO	6330	12/30/94	66	18.8	9.8	18.4
N.E. ENTRANCE PILLOW	7350	1/01/95	---	3.8	1.7	4.0
NORTHEAST ENTRANCE	7350	12/30/94	20	4.0	1.1	3.7
OPHIR PARK	7150	12/26/94	22	5.4	4.2	7.0
PETERSON MDW PILLOW	7200	12/29/94	---	5.2	3.4	4.2
PETERSON MEADOWS	7200	12/29/94	25	5.3	3.2	4.2
PICKFOOT CRK PILLOW	6650	1/01/95	---	3.3	4.0	4.9
PIKE CREEK PILLOW	5930	1/01/95	---	13.8	8.7	11.4
PIPESTONE PASS	7200	12/28/94	18	4.6	1.6	2.1
PLACER BASIN PILLOW	8830	1/01/95	---	8.3	8.9	9.4
PORCUPINE PILLOW	6500	1/01/95	---	3.3	2.0	3.2
REVAIS CREEK	4800	12/29/94	0	.0	.8	1.6
ROCKER PEAK PILLOW	8000	1/01/95	---	7.6	4.8	6.4
ROCKY BOY PILLOW	4700	12/26/94	---	1.2	3.8	2.2
ROCKY BOY	4700	12/26/94	2	.4	2.8	1.8
SACAJAWEA	6550	12/29/94	23	6.1	4.6	---
SADDLE MTN PILLOW	7900	1/01/95	---	12.6	5.8	11.1
SHORT CREEK PILLOW	7000	1/01/95	---	3.2	2.5	2.5
SHOWER FALLS PILLOW	8100	1/01/95	---	10.1	8.2	10.4
SILVER RUN PILLOW	6630	1/01/95	---	2.2	3.1	2.0
SKALKAHO PILLOW	7260	1/01/95	---	10.2	5.1	9.8
S.F. SHIELDS PILLOW	8100	1/01/95	---	7.9	5.3	7.5
SPOTTED BEAR MTN.	7000	12/30/94	27	6.5	4.4	6.6
SPUR PARK PILLOW	8100	1/01/95	---	8.4	8.3	9.8
SQUAW PEAK	6150	12/29/94	27	7.2	5.5	6.0
STAHL PEAK PILLOW	6030	1/01/95	---	21.1	12.5	16.0
STORM LAKE	7780	12/29/94	30	7.0	4.2	5.4

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
STUART MOUNTAIN	7400	12/30/94	47	13.6	6.5	13.4
SUCKER CREEK	3960	12/26/94	0	.0	.0	.6
TAYLOR ROAD	4080	12/26/94	0	.0	3.3	2.0
TEN MILE LOWER	6600	12/27/94	17	4.1	2.8	3.0
TEN MILE MIDDLE	6800	12/27/94	26	6.8	3.8	4.7
TEPEE CREEK PILLOW	8000	1/01/95	---	7.8	3.4	5.7
TIZER BASIN PILLOW	6840	1/01/95	---	5.8	4.2	4.8
TRINKUS LAKE	6100	12/30/94	73	21.9	12.4	18.7
TRUMAN CREEK	4060	12/31/94	9	2.5	1.9	2.0
TV MOUNTAIN	6800	12/30/94	29	7.6	3.6	7.2
TWELVEMILE PILLOW	5600	1/01/95	---	7.2	5.3	7.2
TWENTY-ONE MILE	7150	12/29/94	38	10.8	3.3	7.3
UPPER HOLLAND LAKE	6200	12/30/94	51	14.3	8.8	15.8
WALDRON PILLOW	5600	1/01/95	---	5.2	5.1	5.0
WARM SPRINGS PILLOW	7800	1/01/95	---	9.3	6.5	9.4
WEASEL DIVIDE	5450	12/30/94	62	18.6	11.6	15.3
WEST YELL'ST PILLOW	6700	12/28/94	---	6.3	1.6	4.0
WEST YELLOWSTONE	6700	12/28/94	32	9.4	2.8	4.8
WHISKEY CREEK PILLOW	6800	1/01/95	---	12.3	4.0	7.0
WHITE MILL PILLOW	8700	1/01/95	---	11.5	6.1	11.4
WOOD CREEK PILLOW	5960	1/01/95	---	3.4	3.5	4.4

PRECIPITATION

December precipitation across the state was 12 percent below average and 15 percent above average while water year precipitation was 22 percent above average and 71 percent above last year.

West of the Continental Divide, December precipitation was 26 percent below average and 19 percent above last year and the water year precipitation was 21 percent above average and 78 percent above last year. East of the Divide, December precipitation was 7 percent below average and 23 percent above last year and the water year precipitation was 25 percent above average and 74 percent above last year.

RIVER BASIN	DECEMBER % OF AVERAGE	WATER YEAR % OF AVERAGE
COLUMBIA	74	121
KOOTENAI	80	124
FLATHEAD	82	125
UPPER CLARK FORK	65	117
BITTERROOT	65	116
LOWER CLARK FORK	71	115
MISSOURI	92	127
JEFFERSON	91	133
MADISON	146	144
GALLATIN	87	118
MISSOURI MAINSTEM	52	116
SMITH-JUDITH-MUSSELSHELL	65	101
SUN-TETON-MARIAS	67	134
MILK	109	109
ST. MARY	82	119
YELLOWSTONE	79	133
UPPER YELLOWSTONE	94	123
LOWER YELLOWSTONE (WYOMING)	68	143
WIND	77	130
SHOSHONE	103	136
BIGHORN	38	150
TONGUE	46	159
POWDER	28	197

RESERVOIRS

Major reservoir storages statewide were 26 percent below average and 35 percent below last year.

Reservoir storage west of the Continental Divide was 6 percent below average and 20 percent above last year. East of the Continental Divide, reservoir storages were 5 percent below average and 13 percent above last year.

Most irrigation reservoirs are below to well below average due to the large demand of last summer.

RIVER BASIN	% OF AVERAGE	% OF LAST YEAR
KOOTENAI	121	134
FLATHEAD	73	108
UPPER CLARK FORK	96	88
BITTERROOT	39	119
LOWER CLARK FORK	101	103
JEFFERSON	69	62
MADISON	104	102
GALLATIN	144	126
MAINSTEM MISSOURI	92	90
SMITH-JUDITH-MUSSELSHELL	97	66
SUN-TETON-MARIAS	112	87
ST. MARY AND MILK	80	93
UPPER YELLOWSTONE	101	104
LOWER YELLOWSTONE	92	93

STREAMFLOW

Streamflow forecasts across Montana are 1 percent below average and 32 percent above last years forecasts.

West of the Continental Divide, streamflows are forecast to be 10 percent below average and 21 percent above last years forecasts. East of the Continental Divide, streamflows are forecast to be 5 percent above average and 40 percent above last years forecasts.

RIVER BASIN	FORECASTS % OF AVERAGE	FORECASTS % OF LAST YEAR
KOOTENAI	95	113
FLATHEAD	91	121
UPPER CLARK FORK	82	113
BITTERROOT	94	134
LOWER CLARK FORK	86	123
JEFFERSON	112	178
MADISON	124	156
GALLATIN	112	147
MAINSTEM MISSOURI	107	149
SMITH-JUDITH-MUSSELSHELL	89	97
SUN-TETON-MARIAS	106	129
ST. MARY AND MILK	90	---
UPPER YELLOWSTONE	103	132
LOWER YELLOWSTONE	103	134

NOTE: The FORECAST AS % OF LAST YEAR column above, is this years forecast as a percent of last years forecast, not of what actually occurred.

KOOTENAI RIVER BASIN in Montana as of January 1, 1995

Snowpack conditions in the Kootenai River Basin were well above average. Snow water content was 32 percent above average and 81 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
EAST KOOTENAI in B.C.	11	128	99
KOOTENAI MAINTSTEM in MT	8	181	132
TOBACCO	3	156	125
FISHER	1	184	127
YAAK	3	163	100
KOOTENAI in MT	8	181	132
KOOTENAI ab Bonners Ferry	19	151	114

Mountain precipitation during December was 16 percent below average and 4 percent above last year. Valley precipitation during December was 45 percent below average and 51 percent above last year. Water year precipitation, beginning October 1, 1994, was 24 percent above average and 89 percent above last year.

Lake Koocanusa storage on the last day of December was 21 percent above average and 34 percent above last year.

Reservoir Storage (1000AF) End of December

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
LAKE KOOCANUSA	5748.0	3705.0	2757.0	3050.0

Streamflows are forecast to be 5 percent below average and 13 percent above last year.

Streamflow Forecasts

Forecast Pt Forecast Period	<--- Drier --- 90% (1000AF)	70% (1000AF)	Future Conditions --- Chance of Exceeding * --- 50% (Most Prob) (1000AF)	(% AVG.)	--- Wetter ---> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
TOBACCO nr Eureka							
APR-JUL	80	102	117	88	132	154	133
APR-SEP	90	112	128	87	144	167	147
KOOTENAI bl Libby Dam (1,2)							
APR-JUL	3670	4970	5560	96	6150	7450	5779
APR-SEP	4300	5830	6520	96	7210	8740	6772

Streamflow Forecasts

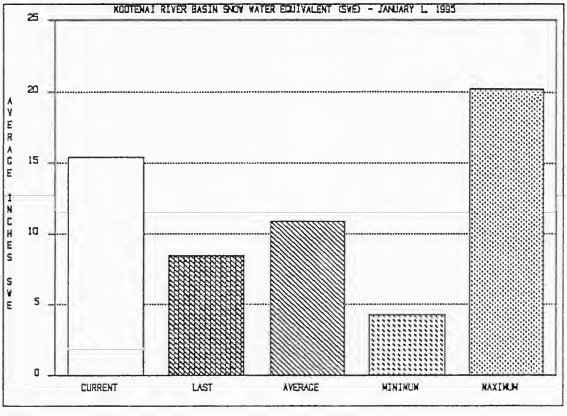
Forecast Pt / Forecast Period	<--- Drier --- 90% (1000AF)	70% (1000AF)	Future Conditions — Chance of Exceeding * — 50% (Most Prob) (1000AF)	50% (% AVG.)	--- Wetter ---> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
FISHER nr Libby							
APR-JUL	125	174	208	89	240	290	234
APR-SEP	137	188	223	89	260	310	250
YAAK near Troy							
APR-JUL	350	425	474	98	525	600	483
APR-SEP	370	445	496	98	545	625	505
KOOTENAI at Leonia (1,2)							
APR-JUL	4420	6050	6790	94	7530	9160	7199
APR-SEP	5090	6960	7810	94	8660	10500	8275

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1969-1994, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1969-1994, OCCURRED IN WATER YEAR 1985.

FLATHEAD RIVER BASIN as of January 1, 1995

Snowpack conditions in the Flathead River Basin were above average. Snow water content was 17 percent above average and 61 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
NORTH FORK FLATHEAD	7	159	114
MIDDLE FORK FLATHEAD	6	155	120
SOUTH FORK FLATHEAD	7	154	109
STILLWATER-WHITEFISH	2	203	126
SWAN	7	167	117
MISSION VALLEY	3	178	127
LITTLE BITTERROOT-ASHLEY	4	116	112
JOCKO	5	167	98
FLATHEAD	29	159	114

Mountain precipitation during December was 17 percent below average and 20 percent above last year. Valley precipitation during December was 46 percent below average and 1 percent above last year. Water year precipitation, beginning October 1, 1994, was 25 percent above average and 74 percent above last year.

Reservoir storage on the last day of December was 27 percent below average and 8 percent above last year. Combined Camas reservoir storage was 52 percent below average and 50 percent below last year; combined Mission Valley reservoir storage was 29 percent below average and 38 percent below last year; Hungry Horse storage was 34 percent below average and 12 percent above last year; and Flathead Lake storage was 13 percent below average and 8 percent above last year.

Reservoir Storage (1000AF) End of December

Reservoir	Usable Capacity	********** Usable Storage ********* This Year	Last Year	Average
CAMAS (4)	45.2	9.0	18.1	18.6
MISSION VALLEY (8)	100.0	24.0	38.7	33.8
HUNGRY HORSE	3451.0	1716.0	1535.0	2586.0
FLATHEAD LAKE	1791.0	1138.0	1070.0	1305.0

Streamflows are forecast to be 9 percent below average and 21 percent above last year.

Streamflow Forecasts

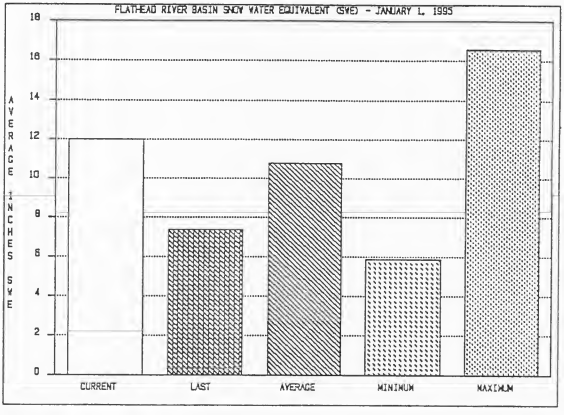
Forecast Pt Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
	Chance of Exceeding *						
NF FLATHEAD nr Columbia Falls							
APR-JUL	1170	1380	1520	91	1660	1870	1662
APR-SEP	1320	1530	1680	92	1830	2040	1836
MF FLATHEAD nr West Glacier							
APR-JUL	1170	1400	1560	95	1720	1950	1638
APR-SEP	1290	1540	1710	96	1880	2130	1788
SF FLATHEAD nr Columbia Fls (1,2)							
APR-JUL	1260	1690	1880	92	2070	2500	2051
APR-SEP	1370	1810	2010	92	2210	2650	2184
FLATHEAD at Columbia Falls (2)							
APR-JUL	3890	4540	4990	91	5440	6090	5482
APR-SEP	4310	4980	5430	91	5880	6550	5960
STILLWATER nr Whitefish							
APR-JUL	96	131	155	82	179	215	189
APR-SEP	111	148	173	83	198	235	209
WHITEFISH nr Kalispell							
APR-JUL	59	74	84	81	94	109	104
APR-SEP	68	84	95	82	106	122	116
SWAN nr Bigfork							
APR-JUL	395	465	513	88	560	630	583
APR-SEP	450	530	584	88	640	715	665
FLATHEAD nr Polson (1,2)							
APR-JUL	4090	5210	5720	90	6230	7350	6390
APR-SEP	4540	5680	6200	90	6720	7860	6926

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1991.

UPPER CLARK FORK RIVER BASIN as of January 1, 1995

Snowpack conditions in the Upper Clark Fork River Basin were average. Snow water content was 4 percent above average and 46 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
CLARK FORK ab FLINT CREEK	11	155	117
FLINT CREEK	5	140	109
ROCK CREEK	3	180	116
CLARK FORK ab BLACKFOOT	17	154	114
BLACKFOOT	14	146	93
UPPER CLARK FORK	28	152	105

Mountain precipitation during December was 34 percent below average and 30 percent above last year. Valley precipitation during December was 45 percent below average and 75 percent above last year. Water year precipitation, beginning October 1, 1994, was 17 percent above average and 68 percent above last year.

Reservoir storage on the last day of December was 4 percent below average and 12 percent below last year. Georgetown Lake storage was 1 percent below average and 3 percent below last year and Nevada Creek storage was 23 percent below average and 53 percent below last year.

Reservoir Storage (1000AF) End of December

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
GEORGETOWN LAKE	31.0	27.5	28.4	27.9
LOWER WILLOW CREEK		NO REPORT		
NEVADA CREEK	12.6	3.0	6.4	3.9

Streamflows are forecast to be 18 percent below average and 13 percent above last year.

Streamflow Forecasts

Forecast Pt Forecast Period	<--- Drier --- 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	--- Wetter ---> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
	Chance of Exceeding *						
MOULTON RES inflow (million gal.)							
APR-JUN	100	161	202	95	245	305	212
APR-JUL	107	177	224	96	270	340	234
WARM SPRINGS CK at Anaconda (2)							
APR-JUL	22	31	36	95	42	50	38
APR-SEP	31	40	46	98	52	61	47
LITTLE BLACKFOOT nr Garrison							
APR-JUL	4.0	40	65	78	90	127	83
APR-SEP	6.0	45	72	81	99	138	89
FLINT CK nr Southern Cross (2)							
APR-JUL	5.6	9.5	12.2	86	14.9	18.8	14.2
APR-SEP	6.2	10.9	14.2	85	17.5	22	16.7
FLINT CK bl Boulder Ck							
APR-JUL	19.0	32	41	72	50	63	57
APR-SEP	26	42	53	73	64	80	73
LOWER WILLOW CK RES inflow							
APR-JUL	2.3	7.1	10.4	74	13.7	18.5	14.0
APR-SEP	2.8	7.7	11.1	75	14.5	19.4	14.8
MF ROCK CK nr Philipsburg							
APR-JUL	28	40	48	73	56	68	66
APR-SEP	32	45	54	73	63	76	74
ROCK CK nr Clinton							
APR-JUL	124	195	243	82	290	360	296
APR-SEP	146	225	276	83	330	405	333
NEVADA CK nr Finn							
APR-JUL	5.7	12.5	17.1	90	22	29	19.1
APR-SEP	7.0	14.0	19.0	88	23	31	21
CLEARWATER nr Clearwater							
APR-JUL	109	137	156	91	175	205	172
APR-SEP	115	144	164	91	184	215	181
BLACKFOOT nr Bonner							
APR-JUL	365	525	630	75	735	895	835
APR-SEP	415	585	700	76	815	985	926
CLARK FORK ab Milltown							
APR-JUL	250	440	570	87	700	890	652
APR-SEP	325	535	675	89	815	1030	755

Streamflow Forecasts

Forecast Pt / Period	<--- Drier --- 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	--- Wetter ---> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
CLARK FORK ab Missoula							
APR-JUL	680	995	1210	81	1420	1740	1487
APR-SEP	795	1140	1370	81	1600	1950	1681

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
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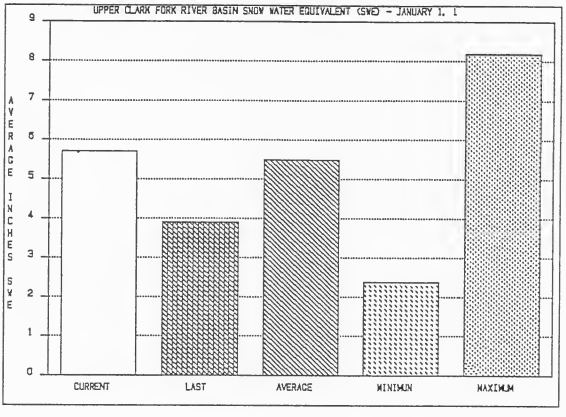

AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1978.

BITTERROOT RIVER BASIN as of January 1, 1995

Snowpack conditions in the Bitterroot River Basin were average. Snow water content was 3 percent above average and 69 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
WEST FORK BITTERROOT	2	199	113
EAST SIDE BITTERROOT	2	152	89
WEST SIDE BITTERROOT	4	171	110
BITTERROOT	8	173	106

Mountain precipitation during December was 33 percent below average and 12 percent above last year. Valley precipitation during December was 55 percent below average and 29 percent above last year. Water year precipitation, beginning October 1, 1994, was 16 percent above average and 78 percent above last year.

Reservoir storage on the last day of December was 61 percent below average and 19 percent above last year. Painted Rocks Lake storage was 86 percent below average and 13 percent below last year and Como storage was 23 percent below average and 33 percent above last year.

Reservoir Storage (1000AF) End of December

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
PAINTED ROCKS LAKE	31.7	2.0	2.3	13.9
COMO	34.9	6.9	5.2	9.0

Streamflows are forecast to be 6 percent below average and 34 percent above last year.

Streamflow Forecasts

Forecast Pt Forecast Period	<--- Drier --- 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	--- Wetter ---> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
WF BITTERROOT nr Conner (2)							
APR-JUL	77	116	142	93	169	210	152
APR-SEP	89	131	159	96	187	230	166
BITTERROOT nr Darby							
APR-JUL	285	395	470	96	545	655	491
APR-SEP	330	445	520	96	595	710	540

Streamflow Forecasts

Forecast Pt Forecast Period	<=== Drier === Future Conditions === Wetter ===> Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
ROCK CK nr Darby (2)							
APR-JUL	56	69	78	99	87	100	79
APR-SEP	60	73	82	99	91	104	83
SKALKAHO CK nr Hamilton							
APR-JUL	19.0	27	33	72	39	47	46
APR-SEP	24	34	40	75	46	56	53
BURNT FORK CK nr Stevensville (2)							
APR-JUL	14.0	20	25	86	30	36	29
APR-SEP	17.0	24	29	85	34	42	34
BITTERROOT at Missoula							
APR-JUL	695	955	1130	87	1310	1570	1301
APR-SEP	800	1060	1230	87	1400	1660	1418

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

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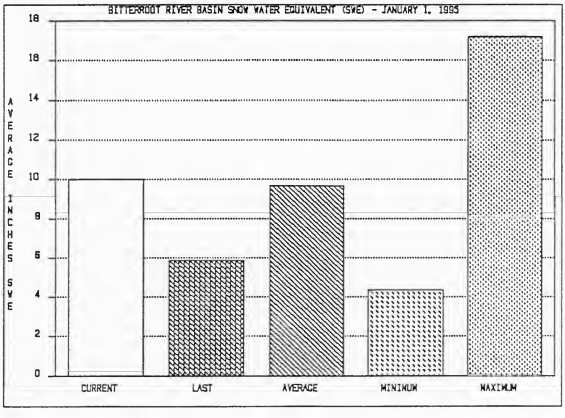

AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1978.

LOWER CLARK FORK RIVER BASIN as of January 1, 1995

Snowpack conditions in the Lower Clark Fork River Basin were average. Snow water content was 10 percent above average and 79 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
UPPER CLARK FORK	28	152	105
BITTERROOT	8	173	106
LOWER CLARK FORK	9	185	111
CLARK FORK TOTAL	42	164	108
FLATHEAD	29	159	114
PEND OREILLE	67	161	112

Mountain precipitation during December was 27 percent below average and 14 percent above last year. Valley precipitation during December was 40 percent below average and 16 percent above last year. Water year precipitation, beginning October 1, 1994, was 15 percent above average and 75 percent above last year.

Noxon Rapids storage on the last day of December was 1 percent above average and 3 percent above last year.

Reservoir Storage (1000AF) End of December

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
NOXON RAPIDS	335.0	321.2	311.3	317.1

Streamflows are forecast to be 14 percent below average and 23 percent above last year.

Streamflow Forecasts

Forecast Pt Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
	Chance of Exceeding *						
CLARK FORK ab Missoula							
APR-JUL	680	995	1210	81	1420	1740	1487
APR-SEP	795	1140	1370	81	1600	1950	1681
CLARK FORK bl Missoula							
APR-JUL	1390	1950	2330	84	2710	3270	2788
APR-SEP	1620	2200	2590	84	2980	3560	3099
CLARK FORK at St. Regis (1)							
APR-JUL	1330	2600	3180	86	3760	5030	3686
APR-SEP	1480	2890	3530	86	4170	5580	4095

Streamflow Forecasts

Forecast Pt / Forecast Period	<--- Drier --- Future Conditions --- Wetter ---> Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
CLARK FORK nr Plains (1,2)							
APR-JUL	4730	7730	9100	87	10500	13500	10450
APR-SEP	5190	8500	10000	87	11500	14800	11470
THOMPSON RIVER nr Thompson Falls							
APR-JUL	95	149	185	86	220	275	214
APR-SEP	110	166	205	85	245	300	240
PROSPECT CREEK at Thompson Falls							
APR-JUL	72	101	121	98	141	170	123
APR-SEP	80	110	130	98	150	181	132
CLARK FK at Whitehorse Rpds (1,2)							
APR-JUL	5170	8560	10100	86	11600	15000	11730
APR-SEP	5670	9410	11100	86	12800	16500	12910

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

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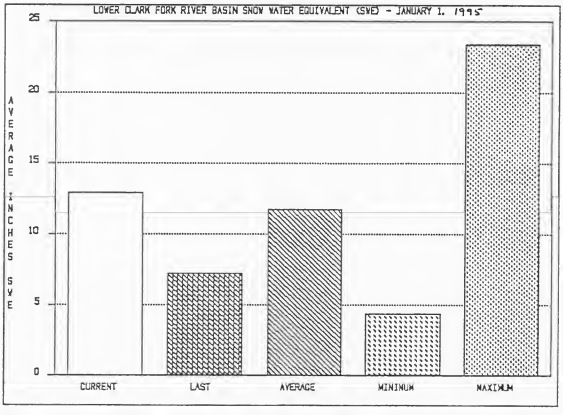

AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1985.

JEFFERSON RIVER BASIN as of January 1, 1995

Snowpack conditions in the Jefferson River Basin were above average. Snow water content was 25 percent above average and 104 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
BEAVERHEAD	8	251	130
RUBY	4	183	117
BIGHOLE	9	199	122
BOULDER	5	176	148
JEFFERSON	20	203	126

Mountain precipitation during December was 10 percent below average and 42 percent above last year. Valley precipitation during December was 14 percent above average and 259 percent above last year. Water year precipitation, beginning October 1, 1994, was 33 percent above average and 108 percent above last year.

Reservoir storage on the last day of December was 31 percent below average and 38 percent below last year. Lima storage was 63 percent below average and 75 percent below last year; Clark Canyon storage was 24 percent below average and 27 percent below last year; and Ruby River storage was 30 percent below average and 29 percent below last year.

Reservoir Storage (1000AF) End of December

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
LIMA	84.0	11.9	47.4	32.4
CLARK CANYON	255.6	108.3	148.3	142.1
RUBY RIVER	38.8	14.2	20.1	20.2

Streamflows are forecast to be 12 percent above average and 78 percent above last year.

Streamflow Forecasts

Forecast Pt Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
			Chance of Exceeding *				
RED ROCK RIVER near Monida (2)							
APR-JUL	62	81	94	97	107	127	97
APR-SEP	61	84	100	95	116	139	105
BEAVERHEAD RIVER near Grant (2)							
APR-JUL	72	103	124	94	145	176	132
APR-SEP	78	116	141	91	166	205	155

Streamflow Forecasts

Forecast Pt Forecast Period	<--- Drier --- Future Conditions --- Wetter ---> Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
BEAVERHEAD RIVER at Barretts (2)							
APR-JUL	104	136	158	92	180	215	172
APR-SEP	123	158	182	90	205	240	203
RUBY RIVER near Alder							
APR-JUL	67	86	99	119	112	131	83
APR-SEP	84	105	120	121	135	157	99
BIG HOLE RIVER near Melrose							
APR-JUL	475	620	720	112	820	965	641
APR-SEP	540	695	800	115	905	1060	697
BOULDER RIVER near Boulder							
APR-JUL	47	70	86	101	102	125	85
APR-SEP	50	75	92	101	109	134	91
WILLOW CREEK near Harrison							
APR-JUL	6.6	13.8	18.7	106	24	31	17.7
APR-SEP	6.9	15.3	21	105	27	35	20
JEFFERSON RIVER near Three Forks (2)							
APR-JUL	705	940	1100	120	1260	1500	920
APR-SEP	810	1060	1235	122	1410	1660	1012

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

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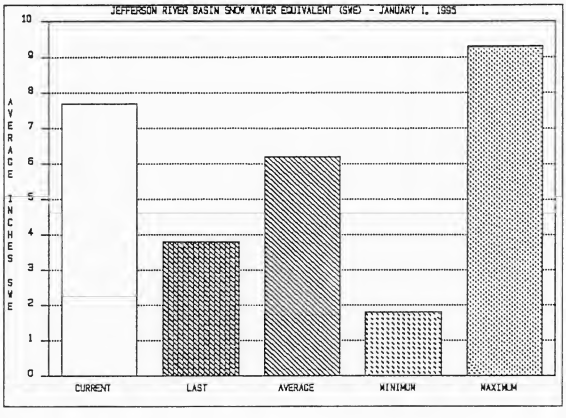


AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1965.

MADISON RIVER BASIN as of January 1, 1995

Snowpack conditions in the Madison River Basin were well above average. Snow water content was 42 percent above average and 125 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
MADISON above HEBGEN	5	281	170
LOWER MADISON	6	191	116
MADISON	11	236	143

Mountain precipitation during December was 45 percent above average and 75 percent above last year. Valley precipitation during December was 123 percent above average and 287 percent above last year. Water year precipitation, beginning October 1, 1994, was 44 percent above average and 116 percent above last year.

Reservoir storage on the last day of December was 4 percent above average and 2 percent above last year. Ennis Lake storage was 9 percent below average and 8 percent above last year and Hebgen Lake storage was 6 percent above average and 2 percent above last year.

Reservoir Storage (1000AF) End of December

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
ENNIS LAKE	41.0	30.7	28.5	33.7
HEBGEN LAKE	377.5	261.4	257.9	246.8

Streamflows are forecast to be 24 percent above average and 56 percent above last year.

Streamflow Forecasts

	<--- Drier ---		Future Conditions		--- Wetter --->		
Forecast Pt	Chance of Exceeding *						
Forecast Period	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
MADISON RIVER near Grayling (2)							
APR-JUL	435	480	509	134	540	585	380
APR-SEP	555	610	644	133	680	735	486

Streamflow Forecasts

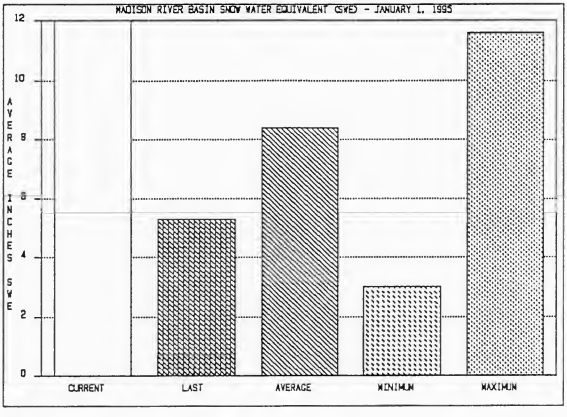
Forecast Pt / Period	<--- Drier --- Future Conditions --- Wetter ---> Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
MADISON RIVER near McAllister (2)							
APR-JUL	660	735	786	119	840	915	662
APR-SEP	840	925	984	118	1040	1130	831

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1971.

*** THIS JANUARY WAS 0.4 INCH GREATER THAN 1971 AND HAS NOW SET A NEW MAXIMUM SNOW WATER EQUIVALENT FOR JANUARY. ***

GALLATIN RIVER BASIN as of January 1, 1995

Snowpack conditions in the Gallatin River Basin were above average. Snow water content was 19 percent above average and 61 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
UPPER GALLATIN	5	180	120
EAST GALLATIN	4	129	109
GALLATIN	8	161	119

Mountain precipitation during December was 14 percent below average and 9 percent below last year. Valley precipitation during December was 12 percent above average and 19 percent below last year. Water year precipitation, beginning October 1, 1994, was 18 percent above average and 64 percent above last year.

Middle Creek storage on the last day of December was 44 percent above average and 26 percent above last year.

Reservoir Storage (1000AF) End of December

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
MIDDLE CREEK	10.2	4.9	3.9	3.4

Streamflows are forecast to be 12 above average and 47 percent above last year.

Streamflow Forecasts

Forecast Pt	<=== Drier === Future Conditions === Wetter ===> Chance of Exceeding *						
Forecast Period	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
GALLATIN RIVER near Gateway							
APR-JUL	420	475	516	117	555	615	441
APR-SEP	500	560	605	117	650	710	518
E & W FK HYALITE CREEK near Bozeman							
APR-JUL	16.0	20	22	96	24	28	23
APR-SEP	19.0	23	25	96	28	31	26
HYALITE CREEK near Bozeman (2)							
APR-JUL	25	31	35	97	39	46	36
APR-SEP	30	36	41	98	46	52	42

Streamflow Forecasts

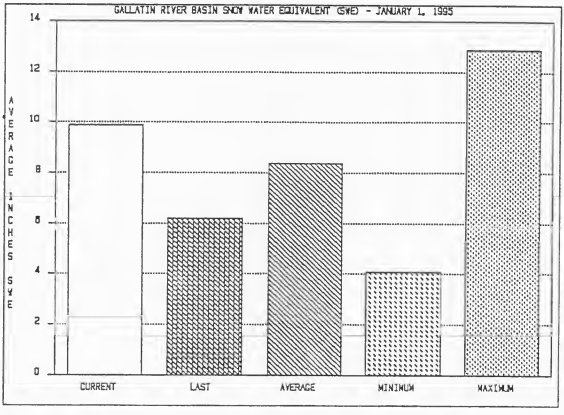
Forecast Pt / Forecast Period	<--- Drier --- Future Conditions --- Wetter ---> Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
GALLATIN RIVER at Logan (2)							
APR-JUL	375	475	542	109	610	710	498
APR-SEP	460	565	638	110	710	815	581

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1966.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1968.

MAINSTEM MISSOURI RIVER BASIN as of January 1, 1995

Snowpack conditions in the Missouri Mainstem River Basin were average. Snow water content was 5 percent above average and 21 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
MISSOURI HEADWATERS	34	202	132
WEST SIDE MISSOURI	6	141	115
SMITH-BELT	4	110	98
MAINSTEM MISSOURI	10	124	106
SUN-TETON-MARIAS	7	148	123
JUDITH-MUSSELSHELL	5	93	81
MISSOURI above FORT PECK	51	174	124
MILK RIVER	8	96	91
MISSOURI in MONTANA	56	165	121
MISSOURI blw YELLOWSTONE	101	162	116

Mountain precipitation during December was 45 percent below average and 23 percent below last year. Valley precipitation during December was well below average and well below last year. Water year precipitation, beginning October 1, 1994, was 16 percent above average and 45 percent above last year.

Reservoir storage on the last day of December was 8 percent below average and 10 percent below last year. Canyon Ferry Lake storage was 10 percent below average and 11 percent below last year; Helena Valley storage was 6 percent below average and 6 percent below last year; Lake Helena storage was 5 percent above average and 2 percent below last year; Hauser & Helena storage was 2 percent above average and 1 percent below last year; Holter Lake storage was 6 percent above average and the same as last year; and Fort Peck Lake storage was 2 percent below average and 1 percent above last year.

Reservoir Storage (1000AF) End of December

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
CANYON FERRY LAKE	2043.0	1529.0	1721.0	1690.0
HELENA VALLEY	9.2	4.8	5.1	5.1
LAKE HELENA	10.4	10.9	11.1	10.4
HAUSER & HELENA	61.9	63.1	63.6	61.7
HOLTER LAKE	81.9	81.3	81.0	76.7
FORT PECK LAKE (MAF)	18.9	14.8	14.6	15.1

Streamflows are forecast to be 7 percent above average and 49 percent above last year.

Streamflow Forecasts

Forecast Pt Forecast Period	<=== Drier === Future Conditions === Wetter ===> Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
MISSOURI RIVER at Toston (2)							
APR-JUL	1590	2050	2370	114	2690	3150	2075
APR-SEP	2030	2430	2760	114	3090	3500	2416
PRICKLY PEAR CREEK near Clancy							
APR-JUL	8.0	15.0	22	96	30	41	23
APR-SEP	9.0	19.0	27	100	35	48	27
SUN RIVER at Gibson Dam (2)							
APR-JUL	330	440	517	108	595	705	478
APR-SEP	375	490	570	108	650	765	526
MISSOURI RIVER at Fort Benton (2)							
APR-JUL	2060	2820	3340	108	3860	4620	3087
APR-SEP	2680	3450	4000	109	4550	5300	3678
MARIAS RIVER near Shelby (2)							
APR-JUL	199	355	462	103	570	725	447
APR-SEP	225	385	491	101	600	760	487
MISSOURI RIVER at Virgelle (2)							
APR-JUL	2090	3140	3850	107	4560	5610	3595
APR-SEP	2950	3860	4570	108	5280	6540	4217
MISSOURI RIVER near Landusky (2)							
APR-JUL	2770	3590	4150	106	4710	5530	3897
APR-SEP	3160	4170	4900	107	5630	7050	4580
MISSOURI RIVER below Fort Peck (2)							
APR-JUL	2390	3480	4215	105	4950	6040	4015
APR-SEP	2900	3890	4830	108	5770	6880	4467
LAKE SAKAKAWEA Inflow (2)							
APR-JUL	7160	9090	10390	105	11700	13600	9897
APR-SEP	7830	10300	11860	105	13400	16200	11346

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

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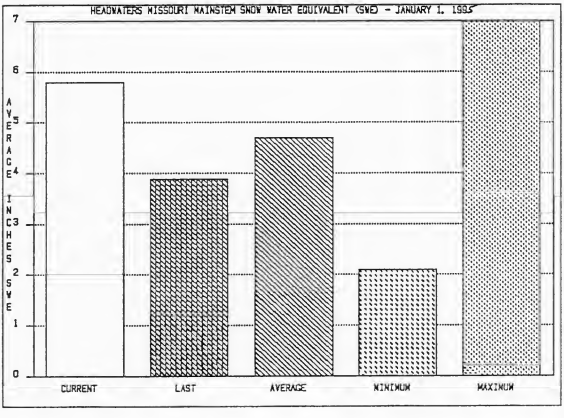

AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1966.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1978.

SMITH-JUDITH-MUSSELSHELL RIVER BASINS as of January 1, 1995

Snowpack conditions in the Smith-Judith-Musselshell River Basins were average. Snow water content was 8 percent below average and 8 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
SMITH-BELT	4	110	98
JUDITH-MUSSELSHELL	5	93	81

Mountain and valley precipitation during December was 35 percent below average and 31 percent below last year. Water year precipitation, beginning October 1, 1994, was 1 percent above average and 5 percent above last year.

Reservoir storage on the last day of December was 3 percent below average and 34 percent below last year. Smith River storage was 32 percent below average and 55 percent below last year; Bair storage was 24 percent below average and 48 percent below last year; Martinsdale storage was 53 percent below average and 75 percent below last year; and Deadman's Basin was 15 percent above average and 17 percent below last year.

Reservoir Storage (1000AF) End of December

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
SMITH RIVER	10.6	4.0	8.8	5.9
NEWLAN CREEK		NO REPORT		
BAIR	7.0	2.8	5.4	3.7
MARTINSDALE	23.1	4.3	17.2	9.2
DEADMAN'S BASIN	72.2	46.5	56.2	40.3

Streamflows are forecast to be 11 percent below average and 3 percent below last year.

Streamflow Forecasts

Forecast Pt	<=== Drier ===	Future Conditions	=== Wetter ===>			
	Chance of Exceeding *					
Forecast Period	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
SMITH RIVER near Fort Logan							
APR-JUL	29	44	55	89	66	82	62
APR-SEP	39	56	67	92	79	96	73
SHEEP CREEK nr White Sulphur Springs							
APR-JUL	10.5	13.5	15.5	86	17.5	21	18.1
APR-SEP	13.0	16.0	18.0	86	20	24	21
NF MUSSELSHELL near Delpine							
APR-JUL	1.0	2.7	3.9	81	5.1	6.8	4.8
APR-SEP	1.3	3.2	4.5	80	5.8	7.7	5.6
SF MUSSELSHELL abv Martinsdale							
APR-JUL	11.0	33	48	92	63	85	52
APR-SEP	14.0	37	52	93	67	90	56

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

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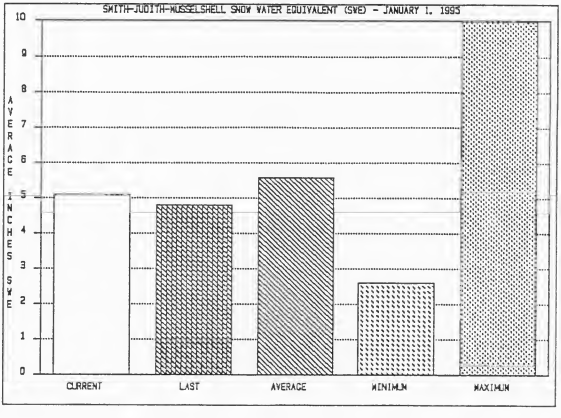

AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1988.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1978.

SUN-TETON-MARIAS RIVER BASINS as of January 1, 1995

Snowpack conditions in the Sun-Teton-Marias River Basins were above average. Snow water content was 23 percent above average and 48 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
SUN-TETON	3	125	106
MARIAS	4	160	132
SUN-TETON-MARIAS	7	148	123

Mountain and valley precipitation during December was 33 percent below average and 19 percent above last year. Water year precipitation, beginning October 1, 1994, was 34 percent above average and 71 percent above last year.

Reservoir storage on the last day of December was 12 percent above average and 13 percent below last year. Gibson storage was 63 percent below average and 67 percent below last year; Pishkun storage was 0 percent of average and 0 percent of last year; Willow Creek storage was 13 percent below average and 40 percent below last year; Lower Two Medicine Lake storage was 37 percent above average and 25 percent below last year; Four Horns Lake storage was 9 percent below average and 13 percent below last year; Swift storage was 13 percent below average and 42 percent below last year; Lake Frances storage was 29 percent below average and 48 percent below last year; and Lake Elwell (Tiber) storage was 27 percent above average and 2 percent below last year.

Reservoir Storage (1000AF) End of December

Reservoir	Usable Capacity	********** Usable Storage ********* This Year	Last Year	Average
GIBSON	99.1	15.1	45.8	41.0
PISHKUN	32.0	0.0	20.1	17.9
WILLOW CREEK	32.2	18.1	30.4	20.8
LOWER TWO MEDICINE LAKE	11.9	8.9	11.8	6.5
FOUR HORNS LAKE	19.2	11.3	13.0	12.4
SWIFT	30.0	12.0	20.7	13.8
LAKE FRANCES	112.0	49.3	94.4	69.6
LAKE ELWELL (TIBER)	1347.0	749.6	762.6	590.6

Streamflows are forecast to be 6 percent above average and 29 percent above last year.

Streamflow Forecasts

Forecast Pt Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
			Chance of Exceeding *				
SUN RIVER at Gibson Dam (2)							
APR-JUL	330	440	517	108	595	705	478
APR-SEP	375	490	570	108	650	765	526
TWO MEDICINE RIVER near Browning (2)							
APR-JUL	132	191	231	107	270	330	215
APR-SEP	146	205	245	107	285	345	228
BADGER CREEK near Browning (2)							
APR-JUL	63	91	109	105	127	155	104
APR-SEP	77	106	126	105	146	175	120
SWIFT RESERVOIR Inflow near Dupuyer							
APR-JUL	34	56	71	104	86	108	68
APR-SEP	46	69	84	105	100	122	80
DUPUYER CREEK near Valier							
APR-JUL	2.5	8.5	16.0	103	24	35	15.5
APR-SEP	1.7	10.0	17.9	103	26	38	17.4
CUT BANK CREEK at Cut Bank							
APR-JUL	44	70	88	101	106	132	87
APR-SEP	51	79	97	101	116	143	96
MARIAS RIVER near Shelby (2)							
APR-JUL	199	355	462	103	570	725	447
APR-SEP	225	385	491	101	600	760	487

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
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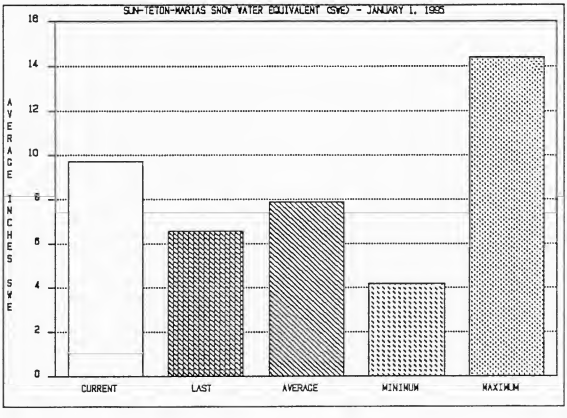


AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1988.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1991.

ST. MARY and MILK RIVER BASINS as of January 1, 1995

Snowpack conditions in the St. Mary and Milk River Basins were average. Snow water content in the Saint Mary River Basin was 10 percent above average and 50 percent above last year. The Milk River Basin was 74 percent below average and 80 percent below last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
MILK HEADWATERS	3	141	117
BEAR PAW	5	20	26
MILK RIVER	8	96	91
ST. MARY	4	149	115
ST. MARY and MILK	9	116	100
BOW RIVER in ALBERTA	0	0	0
OLDMAN RIVER in ALBERTA	0	0	0

Mountain and valley precipitation in the St. Mary River Basin during December was 18 percent below average and 16 percent above last year; and in the Milk River Basin during December was 9 percent above average and 20 percent below last year. Water year precipitation, beginning October 1, 1994, was 16 percent above average and 53 percent above last year.

Reservoir storage on the last day of December was 20 percent below average and 7 percent below last year. Lake Sherburne storage was 27 percent below average and 44 percent below last year; Fresno storage was 4 percent below average and 178 percent above last year; Beaver Creek storage was 33 percent above average and 11 percent below last year; and Nelson storage was 43 percent below average and 56 percent below last year.

Reservoir Storage (1000AF) End of December

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
LAKE SHERBURNE	64.3	15.4	27.5	21.1
FRESNO	127.0	51.1	18.4	53.1
BEAVER CREEK	3.5	2.4	2.7	1.8
NELSON	66.8	21.8	49.4	38.0

Streamflows in the St. Mary are forecast to be 4 percent below average and 26 percent above last year; and in the Milk are forecast to be 16 percent below average.

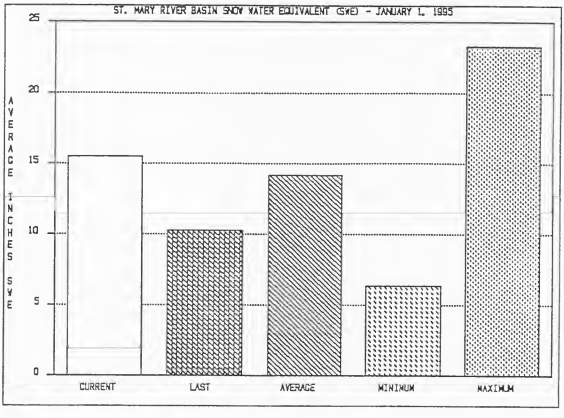
Streamflow Forecasts

Forecast Pt Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
	Chance of Exceeding *						
SWIFTCURRENT CREEK at Sherburne (2)							
APR-JUL	82	96	105	98	114	128	107
APR-SEP	100	114	124	99	134	148	125
ST. MARY RIVER near Babb							
APR-JUL	315	355	378	96	405	440	395
APR-SEP	375	415	445	96	475	515	463
MILK RIVER at Western Crossing							
MAR-JUL	14.0	25	33	75	41	52	44
MAR-SEP	15.0	26	34	74	42	53	46
MILK RIVER at Eastern Crossing (2)							
MAR-JUL	14.0	48	70	88	93	126	80
MAR-SEP	22	57	81	92	105	140	88
BEAVER CREEK near Havre							
MAR-JUL	2.1	5.8	9.7	94	13.6	19.4	10.3

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

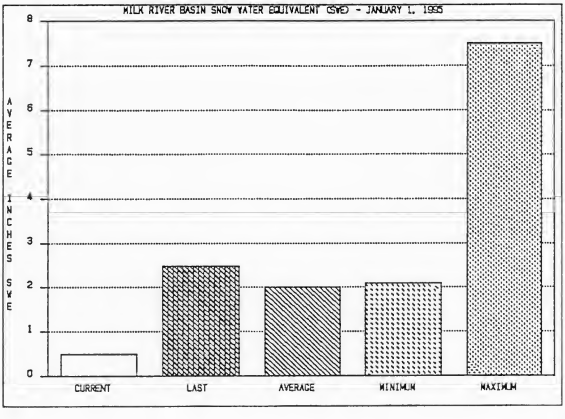
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1988.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1991.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1973-1994, OCCURRED IN WATER YEAR 1988.

*** THIS JANUARY HAS SET A NEW MINIMUM SNOW WATER EQUIVALENT ***

MAXIMUM SNOW WATER EQUIVALENT, 1973-1994, OCCURRED IN WATER YEAR 1978.

UPPER YELLOWSTONE RIVER BASIN as of January 1, 1995

Snowpack conditions in the Upper Yellowstone River Basin were near average. Snow water content was 9 percent above average and 60 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
YELLOWSTONE ab LIVINGSTON	12	191	110
SHIELDS	4	138	113
BOULDER-STILLWATER	3	109	88
CLARK'S FORK-ROCK CREEK	9	165	110
UPPER YELLOWSTONE above BIGH	24	160	108

Mountain precipitation during December was 6 percent below average and 24 percent above last year. Valley precipitation during December was 10 percent below average and 105 percent above last year. Water year precipitation, beginning October 1, 1994, was 23 percent above average and 76 percent above last year.

Reservoir storage on the last day of December was 1 percent above average and 4 percent above last year. Mystic Lake storage was 26 percent below average and 23 percent above last year and Cooney storage was 23 percent above average and 3 percent below last year.

Reservoir Storage (1000AF) End of December

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
MYSTIC LAKE	21.0	8.6	7.0	11.6
COONEY	27.4	17.2	17.7	14.0

Streamflows are forecast to be 3 percent above average and 32 percent above last year.

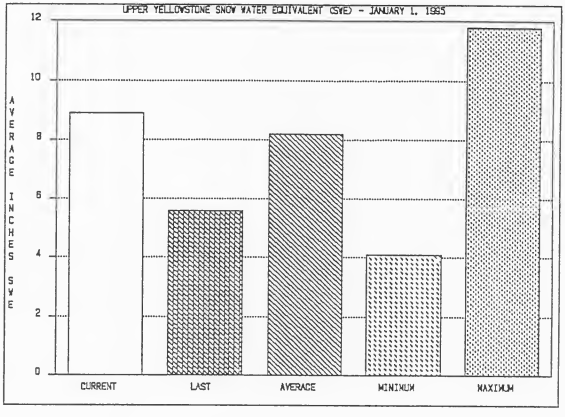
Streamflow Forecasts

Forecast Pt Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
	Chance of Exceeding *						
YELLOWSTONE RIVER at Corwin Springs							
APR-JUL	1350	1540	1674	104	1810	2000	1609
APR-SEP	1620	1850	2014	104	2180	2410	1937
YELLOWSTONE RIVER near Livingston							
APR-JUL	1530	1770	1934	104	2100	2330	1855
APR-SEP	1860	2140	2335	104	2530	2810	2241
SHIELDS RIVER near Livingston							
APR-JUL	85	125	153	94	181	220	162
APR-SEP	100	142	170	95	198	240	179
BOULDER RIVER at Big Timber							
APR-JUL	225	265	296	88	325	370	335
APR-SEP	245	290	319	88	350	395	364
WEST ROSEBUD CREEK near Roscoe (2)							
APR-JUL	50	59	64	105	70	78	61
APR-SEP	66	76	82	104	88	98	79
STILLWATER RIVER nr Absarokee (2)							
APR-JUL	365	465	530	106	595	695	498
APR-SEP	465	570	640	108	710	815	593
CLARKS FORK RIVER near Belfry							
APR-JUL	475	560	615	116	670	755	532
APR-SEP	545	635	700	119	765	855	590
RED LODGE CREEK blw Cooney Res (2)							
APR-JUL	19.0	37	49	104	61	79	47
APR-SEP	30	48	60	105	72	90	57
YELLOWSTONE RIVER at Billings (2)							
APR-JUL	2730	3280	3645	102	4010	4560	3577
APR-SEP	3360	3960	4370	104	4780	5380	4211

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1994, OCCURRED IN WATER YEAR 1976.

LOWER YELLOWSTONE RIVER BASIN as of January 1, 1995

Snowpack conditions in the Lower Yellowstone River Basin, in Wyoming, were slightly above average. Snow water content was 11 percent above average and 56 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
WIND RIVER (Wyoming)	10	168	108
BIGHORN RIVER (Wyoming)	15	160	112
LITTLE BIGHORN	2	92	83
TONGUE RIVER (Wyoming)	5	123	99
POWDER RIVER (Wyoming)	6	153	131
YELLOWSTONE RIVER	48	156	110

Mountain and valley precipitation during December was 32 percent below average and 8 percent above last year. Water year precipitation, beginning October 1, 1994, was 43 percent above average and 75 percent above last year.

Reservoir storage on the last day of December was 8 percent below average and 7 percent below last year. Bighorn Lake storage was 8 percent below average and 8 percent below last year and Tongue River storage was 11 percent below average and 14 percent above last year.

Reservoir Storage (1000AF) End of December

Reservoir	Usable Capacity	********** Usable Storage ********** This Year	Last Year	Average
BIGHORN LAKE	1356.0	817.4	888.2	891.8
TONGUE RIVER	68.0	23.1	20.3	26.0

Streamflows are forecast to be 3 percent above average and 34 percent above last year.

Streamflow Forecasts

Forecast Pt Forecast Period	<=== Drier === 90% (1000AF)	70% (1000AF)	Future Conditions 50% (Most Prob) (1000AF)	(% AVG.)	=== Wetter ===> 30% (1000AF)	10% (1000AF)	30 Yr Avg (1000AF)
	Chance of Exceeding *						
YELLOWSTONE RIVER at Billings (2)							
APR-JUL	2730	3280	3645	102	4010	4560	3577
APR-SEP	3360	3960	4370	104	4780	5380	4211
BIGHORN RIVER nr St. Xavier (2)							
APR-JUL	1240	1520	1706	104	1890	2170	1645
APR-SEP	1360	1680	1905	106	2130	2450	1794
LITTLE BIGHORN RIVER nr Hardin							
APR-JUL	38	96	135	96	174	235	140
APR-SEP	49	112	155	99	198	260	157
YELLOWSTONE RIVER at Miles City (2)							
APR-JUL	4100	5010	5630	104	6250	7160	5431
APR-SEP	4460	5830	6560	104	7290	8420	6281
POWDER RIVER at Moorhead							
MAR-JUL	121	181	221	90	260	320	246
MAR-SEP	142	205	244	91	285	345	268
POWDER RIVER near Locate							
MAR-JUL	127	197	245	76	290	360	320
MAR-SEP	133	215	269	78	325	405	343
YELLOWSTONE RIVER nr Sidney (2)							
APR-JUL	4390	5430	6140	104	6850	7890	5925
APR-SEP	4840	5950	6800	100	7650	9130	6814

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

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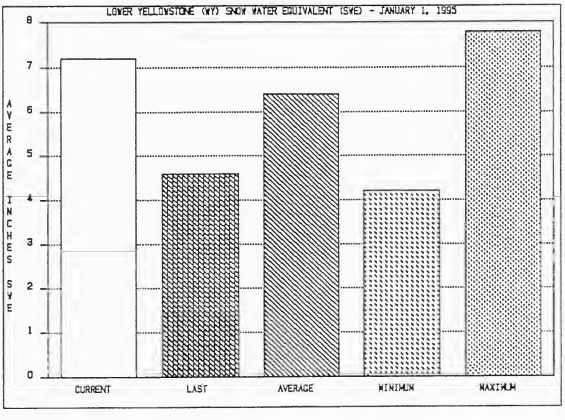

AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1979-1994, OCCURRED IN WATER YEAR 1981.

MAXIMUM SNOW WATER EQUIVALENT, 1979-1994, OCCURRED IN WATER YEAR 1983.

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SOIL CONSERVATION SERVICE

Montana
Basin Outlook Report

Soil Conservation Service
Bozeman, MT